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Entephria cyanata gerennae ssp. nova (Lep. : Geometridae) from Hungary

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Abstract

Description of *Entephria cyanata gerennae ssp. nova* from Bükk mountain (North-Hungary).

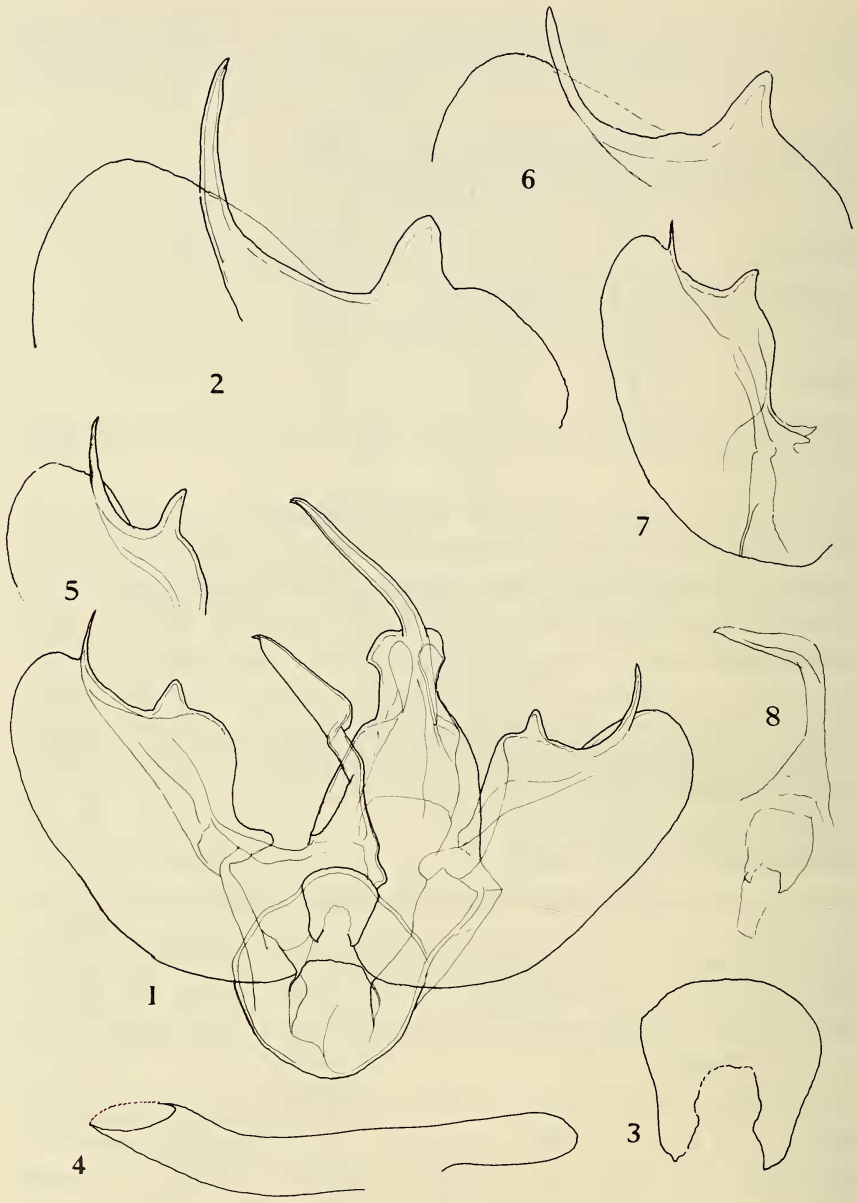
The first *E. cyanata Hb.* specimen from Hungary was collected in the Bükk National Park (Gyulai, Uherkovich, Varga 1979). Over the past few years I have collected further specimens at Bükk mountain.

Individuals of the Bükk population of *cyanata* essentially differ from the nominate form (from the Alps) and from the other described subspecies. The *cyanata* population of Bükk is strictly isolated from the nearest *cyanata* populations of the Carpathians. For this reason, I describe the *cyanata* of Bükk as a new subspecies. The name stems from the locality of the first specimen : Gerennavár.

Entephria cyanata gerennae ssp. n.

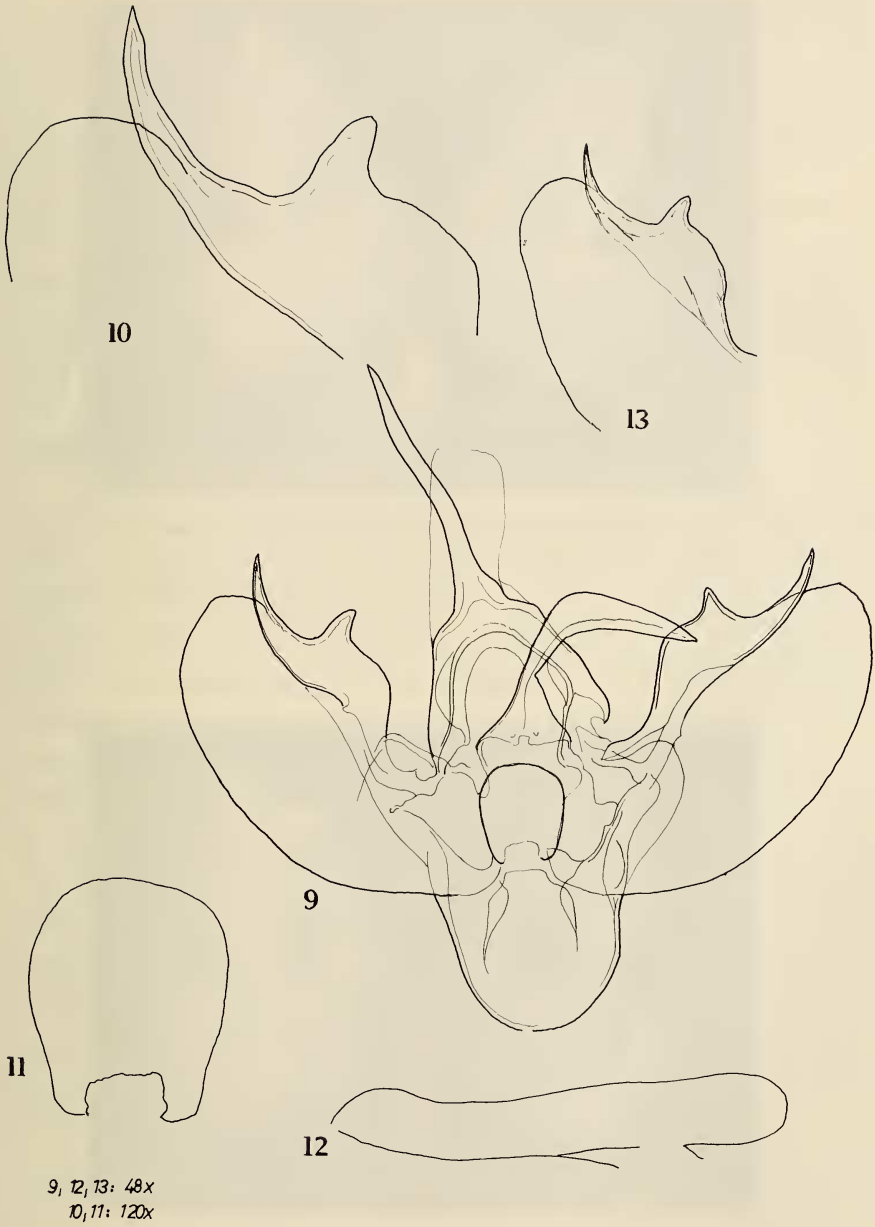
Holotype : 1 ♂, Bükk, Leány-valley, 28.6.1981, gen. prep. No. 38, P. Gyulai (fig. 14). Paratypes : 1 ♂, Leány-valley, 28.6.1981, gen. prep. No. 37, P. Gyulai ; 5 ♀♀ : Gerennavár, 19.7.1977, 21.7.1977 ; Leány-valley, 20.7.1978 ; 28.6.1981 (Fig. 15) ; 30.6.1981 ; all leg. : P. Gyulai with I. Gyulai. Deposited 2 ♂♂, 4 ♀♀ in coll. Dr. P. Gyulai and 1 ♀ in coll. Dr. Z. Varga.

Average length of fore-wings 17,5 mm (♂♂) and 19 mm (♀♀), extreme values : 17-18 mm (♂♂) and 18-20 mm. (♀♀). Shape and pattern of wings agree with those of the nominate subspecies, with the following differences : Bluish colour of fore-wings of the new subspecies is very intense, more so than any other described subspecies. The central part of the fore-wing consequently seems less contrasting and the ground colour less clear than the nominate subspecies. A yellowish powdering on the fore-wings has never been observed. Underside of wings greyish (♂♂) or dirty white (♀♀), a little darker than the nominate form.



1, 4, 5, 7, 8: 48 x
2, 3, 6: 120 x

Figs. 1-8. ♂ Genitalia of *E. cyanata cyanata* Hb. 1-4 : Durmitor mountains (Yugoslavia), 24-25.7.1965, leg. : Z. Varga ; 5 : Southern Carpathians, Herkulesfürdó (now in Romania), leg. : Aszner ; 6-8 : Alps, Lunz am See, 9.1975, leg. : Z. Varga.



Figs. 9-13. ♂ Genitalia of *E. cyanata gerennae ssp. nova* 9-12. Bükk-mountains, Leány valley (Hungary), 28.6.1981, leg. : P. Gyulai with I. Gyulai, Holotype ; 13. locality and date as 9-12, Paratype.

Fig. 14. *E. cyanata gerennae ssp. nova*. Male, Holotype, see as Figs. 9-12.

Fig. 15. *E. cyanata gerennae ssp. nova*. Female, Paratype, see as Fig. 13.

Genitalia : In the male genitalia there are two important differences between the nominate (figs. 1-8) and the new (figs. 9-13) subspecies. The juxta of *E. cyanata gerennae* is much larger and less indent (figs. 3 + 11). The spine and protuberance of the costa are thicker than those of the nominate subspecies (figs. 1, 2, 5, 6, 7 + 9, 10, 13). The aedeagus is also slightly thicker (figs. 4 + 12).

Distribution : Hungary, the northern-western part of Bükk, between 700-900 m above sea level.

Bionomics : Localities are in forest associations of relic character (*Tilio-Sorbetum, Phyllitidi-Aceretum-subcarpathicum* and *Tilio-Fraxinetum*). Food plant probably *Arabis alpina* which lives as a relict in some places of Bükk. The imago flies in June-Huly.

Zoogeographical and evolutional notes

E. cyanata Hb. is a european species distributed in the Jura, Alps, Carpathians and in the high mountains of the Iberian-, Apennine-, and Balkan peninsulas (Aubert 1959, Varga 1971). It is generally an alpine-subalpine species (Hruby 1964, Koch 1976, Varga 1971), but it occurs in some places of the Alps, Bükk – and Bihar – (in Transsylvania) mountains, Southern-Carpathians and Balkans (large karstregions of Croatia and Macedonia) also at low altitudes. It seems to be a true high-mountain species only in southern Europe, e.g. Pirin, Rila, Olympos.

In the Bükk mountains, an analogous situation occurs as in the Karst of Croatia : a zone inversion, the occurrence at low altitudes, the absence of an indigenous coniferous zone and the *Nardetum* grasses in the lower part of the dolinas. In the Bükk, the localities (Leány-valley, Ablakoskó-valley), at an altitude of about 900 m, are surrounded by rocky hillsides, screes, on the north facing slopes of which are sparse woods of dwarf shrub-like beeches. All these localities for *cyanata* (in Bükk, Southern Carpathians and Balkans) seem to indicate a preference of the moth for rocky situations which are essentially similar to conditions in the alpine zone, but at a much lower altitude. Consequently, *cyanata* lives not only in the alpine-subalpine zones, but also in rocky open areas of the forest-zone.

On this evidence, I think *E. cyanata gerennae* is an isolated relic population of *E. cyanata*. The difference from the nominate form, being only at subspecies level, reflects post-glacial isolation. It seems that *E. cyanata gerennae* is most closely related to the *cyanata* populations of the Bihar mountains and the Southern-Carpathians and not to the geographically closer Northern-Carpathians.

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References

Aubert, J.-F. (1959). Les Géométrides paléarctiques du genre *Entephria* Hb. *Zeitschr. d. Wiener Ent. Ges.*, 44/11-12 : 177-214.

Aubert, J.-F. (1960). Supplément au travail concernant les Géométrides paléarctiques du genre *Entephria* Hb. *Zeitschr. d. Wiener Ent. Ges.*, 45 : 172-174.

Gyulai, I., Gyulai, P., Uherkovich, Á, Varga, Z. (1979). Ujabb adatok a magyarországi nagylepkék elterjedéséhez II. *Fol. Ent. Hung.* 32/2 : 225.

Horvat, I. (1960). Planinska vegetacija Makedonije u svijetlu subremenik istrazivanja. *Acta Mus. Maced. Skopje*, 6 : 163-204.

Hruby, K. (1964). Prodromus Lepidopter Slovenska, Bratislava.

Koch, M. (1976). Wir bestimmen Schmetterlinge, Leipzig.

Varga, Z. (1971). Microevólution – Taxonomical and Zoogeographical-Fauna-historical investigations on high-mountain Lepidoptera of Balkan – Candidate dissertation, Debrecen.